

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

- B<sup>1</sup>
1. (currently amended) A dental model base comprising:
    - a stone member having a shape that corresponds generally to at least a portion of a patient's gum line;
    - ~~an~~ a single piece encasement member defining a cavity in which the stone member is cast; and
    - structure within the cavity that fixedly retains the stone member within the cavity of the encasement member such that the stone member and encasement member are inseparable.
  2. (original) The dental model base of claim 1, wherein the encasement member includes:
    - a first end and a second end; and
    - a concave socket at said first end and a latch receiver at said second end.
  3. (original) The dental model base of claim 1, wherein the encasement member includes:
    - a first end and a second end; and
    - a ball at said first end and a latch receiver at said second end.
  4. (original) The dental model base of claim 1, wherein the encasement member is connected to an articulator attachment plate.
  5. (original) The dental model base of claim 1, wherein the encasement member is attachable to an articulator through a ball and socket connection.

6. (currently amended) The dental model base of claim 5 wherein said encasement member has an hemispheric concavity at a first end; said ~~cavity~~ concavity being adapted to receive a ball connected to an articulator.
7. (original) The dental model base of claim 6 wherein said concavity is adapted to engage an articulator attachment plate.
8. (original) The dental model base of claim 1, wherein the encasement member includes a slot at a first end; said slot adapted to receive an articulator tongue.
9. (original) The dental model base of claim 8 wherein said slot is formed in an articulated attachment bar; said articulator attachment bar being detachably engaged with said first end of said dental model base.
10. (original) The dental model base of claim 1 wherein the structure that fixedly retains the stone member in the encasement member includes a projection that extends into the stone member.
11. (original) The dental model base of claim 1 wherein said stone member is fixedly connected to said encasement member by engaging non-uniformities in the encasement member surface adjacent said stone member.
12. (original) The dental model base of claim 1, wherein the structure that fixedly retains the stone member in the encasement member includes a recess defined by the encasement member into which a portion of the stone member projects.
13. (currently amended) A single piece dental model base encasement member comprising:  
a dental model support surface;  
a rigid wall extending from said dental model support surface; said wall being generally perpendicular to said dental model support surface; said wall having an exterior and an interior surface; said wall interior surface extending continuously thereby defining a cavity; said

cavity generally corresponding to the curvature of a gum; said cavity comprising a structure extending along a length of the cavity and adapted to fixedly engage a cast dental model base formed in the cavity.

14. (original) The dental model base encasement member of claim 13 wherein said encasement member is adapted for use with a full arch dental model.

15. (original) The dental model base encasement member of claim 13 wherein said encasement member is adapted for use with a quadrant dental model.

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16. (previously presented) The dental model base encasement member of claim 13 having a first end and a second end; a hemispherical socket formed in said wall exterior surface at said first end; a latch receiver on said wall exterior surface at said second end.

17. (original) The dental model base encasement member of claim 13 having a first end; said dental model base encasement member attachable to an articulator through a ball and socket connection at said first end.

18. (original) The dental model base encasement member of claim 13 having a first end and a second end; said dental model encasement member being attachable to an articulator attachment plate through a ball and socket connection at said first end and a latch receiver at said second end.

19. (original) The dental model base encasement member of claim 13 having a slot at a first end; said slot being adapted to receive an articulator tongue.

20. (original) The dental model base encasement of claim 13 wherein said side wall interior surface is adapted to engage cured casting material formed in said cavity such that perceptible movement between the dental model relative base encasement and the cured casting material is eliminated.

21. (currently amended) A dental model and base comprising:  
a casting of a patient's teeth and gum;  
a stone base supporting said casting; and  
an encasement member ~~defining~~ having an upper support surface, a lower surface,  
and a continuous wall extending between the upper and lower support surfaces that defines a  
cavity for containing said stone base, the cavity comprising a structure spaced between the upper  
and lower support surfaces that extends into the cavity and that fixedly engages said stone base  
to secure the stone base to the encasement member.
22. (original) The dental model and base of claim 21 wherein said encasement member  
is transparent.
23. (original) The dental model and base of claim 21 wherein said base and a portion of  
said casting are connected by a tapered pin fixedly attached to a portion of said stone casting;  
and said pin being in detachable frictional engagement with a tapered aperture formed in said  
base.
24. (original) The dental model and base of claim 21 wherein said casting is connected  
to an articulator through an articulator attachment plate.
25. (original) The dental model and base of claim 21 wherein said casting is connected  
to an articulator through a ball and socket joint.
26. (original) The dental model and base of claim 21 wherein said encasement member  
is plastic.
27. (currently amended) A single piece dental model base encasement member comprising:  
a dental model support surface;  
an opposing surface remote from said dental model support surface;  
a continuous wall extending from said dental model support surface to said  
opposing surface; said wall having an interior surface and an exterior surface; said exterior wall

having a hemispheric concavity formed therein at a first end, said concavity adapted to receive a spherical connector;

said wall interior surface forming a cavity adapted to receive uncured casting material, said cavity shaped to correspond generally to the curvature of a patient's gum, and said wall being rigid.

28. (previously presented) The encasement member of claim 27 wherein said encasement member further comprises a latch receiver at a second end, said latch receiver being adapted to receive a latch connector.

29. (previously presented) The encasement member of claim 28 wherein said encasement member is detachably connectable to an articulator attachment plate having a spherical connector and a latch connector.

30. (original) The encasement member of claim 27 wherein said encasement member is connectable to an articulator through a ball and socket joint.

31. (original) The encasement member of claim 27 wherein said encasement member is connectable to an articulator through both an articulator attachment plate and through a ball and socket connection.

32. (canceled)

33. (currently amended) The encasement member of ~~claim 32~~ claim 27 wherein said concavity is adapted to receive a spherical member connected to an articulator.

34. (currently amended) The encasement member of ~~claim 32~~ claim 27 wherein said concavity is adapted to receive a spherical member connected to an articulator attachment plate.

35. (previously presented) The encasement member of claim 29 wherein said concavity is adapted to receive a spherical member connected to an articulator attachment plate and said latch receiver is adapted to engage a latch connected to said articulator attachment plate.

36. (original) The encasement member of claim 27 wherein said member is transparent.

37. (original) The encasement member of claim 27 wherein said member is plastic.

38. (original) The encasement member of claim 37 wherein said member is a polycarbonate plastic.

39. (currently amended) A system for connecting a dental model to an articulator comprising:

an encasement member having a dental model support surface and an opposing attachment plate support surface, and a rigid wall extending therebetween; said encasement member forming wall extending continuously around a circumference of the encasement member thereby defining a cavity adapted to receive uncured casting material; said cavity including a structure extending into the cavity that is positioned between the dental model support surface and the attachment plate support surface and that is adapted to grip said casting material when it cures; and

an articulator attachment plate; said articulator attachment plate extending along the attachment plate support surface and being connectable to said encasement member and to an articulator.

40. (currently amended) A system for connecting a dental model to an articulator comprising:

an encasement member; said encasement member forming including a continuously extending rigid wall that defines a cavity adapted to receive uncured casting material; said cavity comprising a structure an undercut structure adapted to grip said casting material when it cures into a stone member so as to form an inseparable member comprising the encasement member and the stone member; and

a ball and socket connector adapted to connect said encasement member to an articulator.

41. (currently amended) A dental model assembly comprising:

an encasement member defining a cavity adapted to receive uncured casting material, the cavity being defined by a wall that extends continuously around a circumference of the cavity, the cavity being shaped to generally correspond to at least a portion of a patient's gum line, the cavity being open adjacent opposite first and second sides of the encasement member; and

an attachment plate removably connectable to the encasement member, the attachment plate acting as a cover for enclosing the cavity adjacent the first side of the encasement member.

42. (previously presented) The dental model assembly of claim 41, wherein the attachment plate connects to the encasement member by a snap-fit connection.

43. (currently amended) A dental model assembly comprising:

a) a dental model base including:

i) an a rigid, single piece encasement member defining a cavity shaped to generally correspond to at least a portion of a patient's gum line;

ii) a stone member cast within the cavity, the stone member being shaped to generally correspond to the portion of the patient's gum line, the stone member defining at least one pin opening;

b) a dental model adapted to be supported on the dental model base, the dental model including at least one pin that fits within the at least one pin opening of the stone member; and

c) an articulator connected to the encasement member of the dental model base.

44. (canceled)

45. (currently amended) A method for forming a dental model and base assembly comprising:

filling a cavity ~~formed by an~~ defined by a rigid encasement member with uncured casting material; the encasement member including an engagement structure extending into the cavity that engages engaging the casting material in said cavity such that the cured casting material is ~~rigidly connected~~ fixed to the encasement member; said encasement member and cured casting material forming a dental model base; and

placing a cast dental model adjacent said uncured casting material in said cavity; said dental model being engaged with said dental model base when said casting material is cured.

46. (original) The method of claim 45 wherein a pin is connected to said cast dental model and said pin extends into said uncured casting material when said dental model is placed adjacent said uncured casting material in said cavity.

47. (original) A method of attaching a dental model to an articulator comprising:  
filling a cavity formed by an encasement member with uncured casting material;  
placing a dental model adjacent said uncured casting material in said cavity; said dental model having at least one pin extending into said uncured casting material; said dental model being engaged with said casting material when said casting material is cured;  
engaging a spherical connector with a concave portion of said encasement member; said spherical connector being connected to an articulator.

48. (original) The method of claim 47 wherein:  
said spherical connector is glued into position after engaging the concave portion of said encasement member.

49. (original) The method of claim 48 wherein said spherical connector is connected to a plastic articulator.

50. (original) A method of attaching a dental model to an articulator comprising:  
filling a cavity formed by an encasement member with casting material;  
placing a dental model adjacent said uncured casting material in said cavity; said dental model being engaged with said casting material when said casting material is cured;



engaging a spherical connector with a concave portion provided at a first end of said encasement member; said spherical connector being at a first end of an articulator attachment plate;

rotating said articulator attachment plate around said concave portion of said encasement member until a latch on a second end of said articulator attachment plate engages a latch receiver at a second end of said encasement member; and attaching said articulator attachment plate to an articulator.

51. (currently amended) A method of attaching a dental model to an articulator comprising:  
filling a cavity ~~formed by an~~ defined by a rigid, single piece encasement member with uncured casting material;

placing a cast dental model adjacent said uncured casting material in said cavity; said dental model being engaged with said casting material when said casting material is cured; and

connecting said encasement member to an articulator.

52. (original) The method of claim 51 wherein said encasement member forms a ball and socket joint with the articulator.

53. (original) The method of claim 51 wherein said encasement member detachably engages an articulator attachment plate and said articulator attachment plate being adapted to be connected to the articulator.

54. (original) The method of claim 51 wherein said encasement member has a slot at a first end; said slot adapted for receiving an articulator attachment tongue.

55. (original) The method of claim 54 wherein said slot is formed in an articulator attachment bar that slidingly engages the encasement member first end.